

TABLE 2-1  
SELECTION OF EXPOSURE PATHWAYS -- Phase 2 Risk Assessment  
UPPER HUDSON RIVER

Scenario Timeframe	Source Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Current/Future	Fish	Fish	Upper Hudson Fish	Angler	Adult Child **	Ingestion	On-Site	Quant	PCBs have been widely detected in fish.
	Sediment	Sediment	Banks of Upper Hudson	Recreator	Adult	Ingestion	On-Site	Quant	Recreators may ingest or otherwise come in contact with contaminated river sediment while engaging in activities along the river.
					Adolescent	Dermal	On-Site	Quant	
					Child	Ingestion	On-Site	Quant	
					Child	Dermal	On-Site	Quant	
	River Water	Drinking Water	Upper Hudson River	Resident	Adult	Ingestion	On-Site	Quant	Considered in Phase 1 Risk Assessment and determined to have de minimis risk. Concentrations below the MCL does not pose a risk during occasional exposure, such as during swimming. Not evaluated further in this HHRA.
					Adolescent Child	Ingestion Ingestion	On-Site On-Site	Quant Quant	
		River Water	Upper Hudson River (wading/swimming)	Recreator	Adult	Dermal	On-Site	Quant	Recreators may come in contact with contaminated river water while wading or swimming.
					Adolescent Child	Dermal Dermal	On-Site On-Site	Quant Quant	
		Outdoor Air	Upper Hudson River (River and near vicinity)	Recreator	Adult	Inhalation	On-Site	Quant	Recreators may inhale volatilized PCBs while engaging in river-related activities.
					Adolescent Child	Inhalation Inhalation	On-Site On-Site	Quant Quant	
	Resident	Upper Hudson River (River and near vicinity)	Resident	Adult	Inhalation	On-Site	Quant	Nearby residents may inhale volatilized PCBs outside of their home.	
				Adolescent Child	Inhalation Inhalation	On-Site On-Site	Quant Quant		
	Home-grown Crops	Vegetables	Upper Hudson vicinity	Resident	Adult	Ingestion	On-Site	Qual	Limited data; studies show low PCB uptake in forage crops.
Adolescent					Ingestion	On-Site	Qual		
Child					Ingestion	On-Site	Qual		
Beef	Beef	Upper Hudson vicinity	Resident	Adult	Ingestion	On-Site	Qual	Limited data; studies show non-detect PCB levels in cow's milk in NY.	
				Adolescent	Ingestion	On-Site	Qual		
				Child	Ingestion	On-Site	Qual		
Dairy Products	Milk, eggs	Upper Hudson vicinity	Resident	Adult	Ingestion	On-Site	Qual	Limited data; studies show non-detect PCB levels in cow's milk in NY.	
				Adolescent	Ingestion	On-Site	Qual		
				Child	Ingestion	On-Site	Qual		

\*\* Child angler considered in Monte Carlo analysis.

TABLE 2-2  
 OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
 UPPER HUDSON RIVER - Fish

Scenario Timeframe: Current/Future
Medium: Fish
Exposure Medium: Fish
Exposure Point: Upper Hudson Fish

CAS Number	Chemical	Minimum Concentration <sup>(1)</sup>	Minimum Qualifier	Maximum Concentration <sup>(1)</sup>	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value	Screening Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection <sup>(2)</sup>
1336-36-3	PCBs (3)	0.005	N/A	13.1	N/A	mg/kg wet weight	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	FD, TX, ASL

(1) Minimum/maximum modeled concentration between 1999-2069 (USEPA, 1999d).

- (2) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)  
 Frequent Detection (FD)  
 Toxicity Information Available (TX)  
 Above Screening Levels (ASL)  
 Deletion Reason: Infrequent Detection (IFD)  
 Background Levels (BKG)  
 No Toxicity Information (NTX)  
 Essential Nutrient (NUT)  
 Below Screening Level (BSL)

(3) Occurrence and distribution of PCBs in fish were modeled, not measured (USEPA, 1999d).

- Definitions: N/A = Not Applicable  
 SQL = Sample Quantitation Limit  
 COPC = Chemical of Potential Concern  
 ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered  
 MCL = Federal Maximum Contaminant Level  
 SMCL = Secondary Maximum Contaminant Level  
 J = Estimated Value  
 C = Carcinogenic  
 N = Non-Carcinogenic

TABLE 2-3  
 OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
 UPPER HUDSON RIVER - Sediment

Scenario Timeframe: Current/Future
Medium: Sediment
Exposure Medium: Sediment
Exposure Point: Banks of Upper Hudson

CAS Number	Chemical	Minimum Concentration <sup>(1)</sup>	Minimum Qualifier	Maximum Concentration <sup>(1)</sup>	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value	Screening Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection <sup>(2)</sup>
1336-36-3	PCBs (3)	0.6	N/A	76.8	N/A	mg/kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	FD, TX, ASL

(1) Minimum/maximum modeled concentration between 1999-2069 (USEPA, 1999d).

(2) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)  
 Frequent Detection (FD)  
 Toxicity Information Available (TX)  
 Above Screening Levels (ASL)  
 Deletion Reason: Infrequent Detection (IFD)  
 Background Levels (BKG)  
 No Toxicity Information (NTX)  
 Essential Nutrient (NUT)  
 Below Screening Level (BSL)

(3) Occurrence and distribution of PCBs in sediment were modeled, not measured (USEPA, 1999d).

Definitions: N/A = Not Applicable  
 SQL = Sample Quantitation Limit  
 COPC = Chemical of Potential Concern  
 ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered  
 MCL = Federal Maximum Contaminant Level  
 SMCL = Secondary Maximum Contaminant Level  
 J = Estimated Value  
 C = Carcinogenic  
 N = Non-Carcinogenic

TABLE 2-4  
 OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
 UPPER HUDSON RIVER - River Water

Scenario Timeframe: Current/Future
Medium: River Water
Exposure Medium: River Water
Exposure Point: Upper Hudson River

CAS Number	Chemical	Minimum Concentration <sup>(1)</sup>	Minimum Qualifier	Maximum Concentration <sup>(1)</sup>	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value	Screening Toxicity Value	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection <sup>(2)</sup>
1336-36-3	PCBs (3)	0.00E+00	N/A	4.90E-04	N/A	mg/L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	FD, TX, ASL

(1) Minimum/maximum modeled concentration between 1999-2069 (USEPA, 1999d).

(2) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)  
 Frequent Detection (FD)  
 Toxicity Information Available (TX)  
 Above Screening Levels (ASL)  
 Deletion Reason: Infrequent Detection (IFD)  
 Background Levels (BKG)  
 No Toxicity Information (NTX)  
 Essential Nutrient (NUT)  
 Below Screening Level (BSL)

(3) Occurrence and distribution of PCBs in river water were modeled, not measured (USEPA, 1999d).

Definitions: N/A = Not Applicable  
 SQL = Sample Quantitation Limit  
 COPC = Chemical of Potential Concern  
 ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered  
 MCL = Federal Maximum Contaminant Level  
 SMCL = Secondary Maximum Contaminant Level  
 J = Estimated Value  
 C = Carcinogenic  
 N = Non-Carcinogenic

TABLE 2-5  
 OCCURRENCE, DISTRIBUTION AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN  
 UPPER HUDSON RIVER - Outdoor Air

Scenario Timeframe: Current/Future
Medium: River Water
Exposure Medium: Outdoor Air
Exposure Point: Upper Hudson River -- Water Vapor

CAS Number	Chemical	Minimum Concentration <sup>(1)</sup>	Minimum Qualifier	Maximum Concentration <sup>(1)</sup>	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value <sup>(2)</sup>	Screening Toxicity Value <sup>(3)</sup>	Potential ARAR/TBC Value	Potential ARAR/TBC Source	COPC Flag	Rationale for Contaminant Deletion or Selection <sup>(4)</sup>
1336-36-3	PCBs (5)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Yes	FD, TX, ASL

(1) Minimum/maximum concentration.

(2) N/A - Refer to supporting information for background discussion.

Background values derived from statistical analysis. Follow Regional guidance and provide supporting information.

(3) Provide reference for screening toxicity value.

(4) Rationale Codes Selection Reason: Infrequent Detection but Associated Historically (HIST)

Frequent Detection (FD)

Toxicity Information Available (TX)

Above Screening Levels (ASL)

Deletion Reason: Infrequent Detection (IFD)

Background Levels (BKG)

No Toxicity Information (NTX)

Essential Nutrient (NUT)

Below Screening Level (BSL)

(5) Occurrence and distribution of PCBs in outdoor air is based on modeled river water concentrations, not measured (USEPA, 1999d).

Definitions: N/A = Not Applicable

SQL = Sample Quantitation Limit

COPC = Chemical of Potential Concern

ARAR/TBC = Applicable or Relevant and Appropriate Requirement/To Be Considered

MCL = Federal Maximum Contaminant Level

SMCL = Secondary Maximum Contaminant Level

J = Estimated Value

C = Carcinogenic

N = Non-Carcinogenic

TABLE 2-6  
MEDIUM-SPECIFIC MODELED EXPOSURE POINT CONCENTRATION SUMMARY  
UPPER HUDSON RIVER FISH - Thompson Island Pool

Scenario Timeframe: Current/Future  
 Medium: Fish  
 Exposure Medium: Fish  
 Exposure Point: Upper Hudson Fish - Thompson Island Pool

Chemical of Potential Concern	Units	Arithmetic Mean*	95% UCL of Normal Data	Maximum Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
PCBs												
in Brown Bullhead	mg/kg wet weight	2.8	**	13.1	N/A	mg/kg wet weight	4.7	Mean-N	Averaged over RME ED	9.2	Mean-N	Averaged over CT ED
in Largemouth Bass	mg/kg wet weight	1.4	**	6.4	N/A	mg/kg wet weight	2.3	Mean-N	Averaged over RME ED	4.6	Mean-N	Averaged over CT ED
in Yellow Perch	mg/kg wet weight	1.3	**	5.1	N/A	mg/kg wet weight	2.1	Mean-N	Averaged over RME ED	3.7	Mean-N	Averaged over CT ED
Species-weighted (1)	mg/kg wet weight	1.9	**	8.5	N/A	mg/kg wet weight	3.3	Mean-N	Averaged over RME ED	6.1	Mean-N	Averaged over CT ED
Species-weighted for chronic exposure (2)	mg/kg wet weight	1.9	**	8.5	N/A	mg/kg wet weight	7.6	Mean-N	Averaged over RME ED	6.1	Mean-N	Averaged over CT ED

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Mean of Log-transformed Data (Mean-T); Mean of Normal Data (Mean-N).

\* Arithmetic mean calculated from 50th percentile (median) and 95th percentile modeled concentrations assuming lognormal distributions. Mean is for 70 year time period. See text for discussion.

\*\* 95% UCLM not calculated (see text).

ED = Exposure Duration

CT = Central Tendency

(1) PCB concentrations for each species were weighted based on species-group intake percentages (Connelly et al., 1992) and averaged over the central tendency exposure duration (12 years) to calculate the CT EPC, and over the RME exposure duration (40 years) to calculate the RME EPC for cancer risks.

(2) PCB concentrations for each species were weighted based on species-group intake percentages (Connelly et al., 1992) and averaged over the central tendency exposure duration (12 years) to calculate the CT EPC, and over the RME exposure duration (7 years) to calculate the RME EPC for non-cancer hazards.

TABLE 2.7  
MEDIUM-SPECIFIC MODELED EXPOSURE POINT CONCENTRATION SUMMARY  
UPPER HUDSON RIVER FISH - River Mile 168

Scenario Timeframe: Current/Future  
Medium: Fish  
Exposure Medium: Fish  
Exposure Point: Upper Hudson Fish - River Mile 168

Chemical of Potential Concern	Units	Arithmetic Mean*	95% UCL of Normal Data	Maximum Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
PCBs												
in Brown Bullhead	mg/kg wet weight	1.5	**	6.4	N/A	mg/kg wet weight	2.6	Mean-N	Averaged over RME ED	4.8	Mean-N	Averaged over CT ED
in Largemouth Bass	mg/kg wet weight	1.1	**	5.6	N/A	mg/kg wet weight	2.0	Mean-N	Averaged over RME ED	4.1	Mean-N	Averaged over CT ED
in Yellow Perch	mg/kg wet weight	0.95	**	4.7	N/A	mg/kg wet weight	1.6	Mean-N	Averaged over RME ED	3.5	Mean-N	Averaged over CT ED
Species-weighted (1)	mg/kg wet weight	1.3	**	5.6	N/A	mg/kg wet weight	2.2	Mean-N	Averaged over RME ED	4.4	Mean-N	Averaged over CT ED
Species-weighted for chronic exposure (2)	mg/kg wet weight	1.3	**	5.6	N/A	mg/kg wet weight	5.1	Mean-N	Averaged over RME ED	4.4	Mean-N	Averaged over CT ED

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Mean of Log-transformed Data (Mean-T);

Mean of Normal Data (Mean-N).

\* Arithmetic mean calculated from 50th percentile (median) and 95th percentile modeled concentrations assuming lognormal distributions. Mean is for 70 year time period. See text for discussion.

\*\* 95% UCLM not calculated (see text).

ED = Exposure Duration

CT = Central Tendency

(1) PCB concentrations for each species were weighted based on species-group intake percentages (Connelly et al., 1992) and averaged over the central tendency exposure duration (12 years) to calculate the CT EPC, and over the RME exposure duration (40 years) to calculate the RME EPC for cancer risks.

(2) PCB concentrations for each species were weighted based on species-group intake percentages (Connelly et al., 1992) and averaged over the central tendency exposure duration (12 years) to calculate the CT EPC, and over the RME exposure duration (7 years) to calculate the RME EPC for non-cancer hazards.

TABLE 2-8  
MEDIUM-SPECIFIC MODELED EXPOSURE POINT CONCENTRATION SUMMARY  
UPPER HUDSON RIVER FISH - River Miles 157 and 154 (averaged)

Scenario Timeframe: Current/Future  
Medium: Fish  
Exposure Medium: Fish  
Exposure Point: Upper Hudson Fish - River Miles 157 and 154 (averaged)

Chemical of Potential Concern	Units	Arithmetic Mean*	95% UCL of Normal Data	Maximum Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
PCBs												
in Brown Bullhead	mg/kg wet weight	0.51	**	2.8	N/A	mg/kg wet weight	0.9	Mean-N	Averaged over RME ED	1.9	Mean-N	Averaged over CT ED
in Largemouth Bass	mg/kg wet weight	0.62	**	3.3	N/A	mg/kg wet weight	1.1	Mean-N	Averaged over RME ED	2.4	Mean-N	Averaged over CT ED
in Yellow Perch	mg/kg wet weight	0.53	**	2.8	N/A	mg/kg wet weight	0.9	Mean-N	Averaged over RME ED	2.1	Mean-N	Averaged over CT ED
Species-weighted (1)	mg/kg wet weight	0.54	**	2.8	N/A	mg/kg wet weight	1.0	Mean-N	Averaged over RME ED	2.2	Mean-N	Averaged over CT ED
Species-weighted for chronic exposure (2)	mg/kg wet	0.54	**	2.8	N/A	mg/kg wet weight	2.6	Mean-N	Averaged over RME ED	2.2	Mean-N	Averaged over CT ED

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Mean of Log-transformed Data (Mean-T);

Mean of Normal Data (Mean-N).

\* Arithmetic mean calculated from 50th percentile (median) and 95th percentile modeled concentrations assuming lognormal distributions. Mean is for 70 year time period. See text for discussion.

\*\* 95% UCLM not calculated (see text).

ED = Exposure Duration

CT = Central Tendency

(1) PCB concentrations for each species were weighted based on species-group intake percentages (Connelly et al., 1992) and averaged over the central tendency exposure duration (12 years) to calculate the CT EPC, and over the RME exposure duration (40 years) to calculate the RME EPC for cancer risks.

(2) PCB concentrations for each species were weighted based on species-group intake percentages (Connelly et al., 1992) and averaged over the central tendency exposure duration (12 years) to calculate the CT EPC, and over the RME exposure duration (7 years) to calculate the RME EPC for non-cancer hazards.

TABLE 2-9  
MEDIUM-SPECIFIC MODELED EXPOSURE POINT CONCENTRATION SUMMARY  
UPPER HUDSON RIVER SEDIMENT

Scenario Timeframe: Current/Future  
 Medium: Sediment  
 Exposure Medium: Sediment  
 Exposure Point: Banks of Upper Hudson

Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL of Normal Data	Maximum Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
PCBs	mg/kg	14.9	**	77	N/A	mg/kg	28.7	95th percentile area average	High-end estimate	14.9	mean area average	Central estimate

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Mean of Log-transformed Data (Mean-T);

Mean of Normal Data (Mean-N).

\*\* Not applicable because sediment data was modeled, not measured (see text).

(1) Mean/maximum of modeled concentration 1999-2020 (USEPA, 1999d).

TABLE 2-10  
MEDIUM-SPECIFIC MODELED EXPOSURE POINT CONCENTRATION SUMMARY  
UPPER HUDSON RIVER WATER

Scenario Timeframe: Current/Future  
 Medium: River Water  
 Exposure Medium: River Water  
 Exposure Point: Upper Hudson River

Chemical of Potential Concern	Units	Arithmetic Mean (1)	95% UCL of Normal Data	Maximum Concentration (1)	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
PCBs	mg/L	2.4E-05	**	4.8E-04	N/A	mg/L	3.1E-05	95th percentile area average	High-end estimate	2.4E-05	mean area average	Central estimate

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Mean of Log-transformed Data (Mean-T);

Mean of Normal Data (Mean-N).

\*\* Not applicable because river water data was modeled, not measured (see text).

(1) Mean/maximum of modeled concentration 1999-2020 (USEPA, 1999d).

TABLE 2-11  
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY  
UPPER HUDSON RIVER AIR

Scenario Timeframe: Current/Future  
 Medium: River Water  
 Exposure Medium: Outdoor Air  
 Exposure Point: Upper Hudson River -- Volatilized PCBs

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
PCBs	mg/m <sup>3</sup>	**	**	**	N/A	mg/m <sup>3</sup>	1.7E-05	Used high-end empirical transfer coefficient estimate	High-end estimate	1.0E-06	Used midpoint between modeled concentration and empirical transfer coefficient estimate	Central estimate

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N); 95% UCL of Log-transformed Data (95% UCL-T); Mean of Log-transformed Data (Mean-T); Mean of Normal Data (Mean-N).

\*\* Not applicable because outdoor air concentrations based on modeled river water concentrations (refer to Table A-2) and water to air transfer coefficient.

TABLE 2-12  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
UPPER HUDSON RIVER FISH - Adult Angler

Scenario Timeframe: Current/Future
Medium: Fish
Exposure Medium: Fish
Exposure Point: Upper Hudson Fish
Receptor Population: Angler
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	C <sub>fish</sub> -C	PCB Concentration in Fish (Cancer)**	mg/kg wet weight	2.2	See Tables 2-6 through 2-8	4.4	See Tables 2-6 through 2-8	Average Daily Intake (mg/kg-day) = C <sub>fish</sub> x IR <sub>fish</sub> x (1 - Loss) X FS x EF x ED x CF x 1/BW x 1/AT
	C <sub>fish</sub> -NC	PCB Concentration in Fish (Non-cancer)**	mg/kg wet weight	5.1	See Tables 2-6 through 2-8	4.4	See Tables 2-6 through 2-8	
	IR <sub>fish</sub>	Ingestion Rate of Fish	grams/day	31.9	90th percentile value, based on 1991 NY Angler survey.	4.0	50th percentile value, based on 1991 NY Angler survey.	
	Loss	Cooking Loss	g/g	0	Assumes 100% PCBs remains in fish.	0.2	Assumes 20% PCBs in fish is lost through cooking.	
	FS	Fraction from Source	unitless	1	Assumes 100% fish ingested is from Upper Hudson.	1	Assumes 100% fish ingested is from Upper Hudson.	
	EF	Exposure Frequency	days/year	365	Fish ingestion rate already averaged over one year.	365	Fish ingestion rate already averaged over one year.	
	ED	Exposure Duration (Cancer)	years	40	95th percentile value, based on 1991 NY Angler and 1990 US Census data.	12	50th percentile value, based on 1991 NY Angler and 1990 US Census data.	
	ED	Exposure Duration (Noncancer)	years	7	see text	12	50th percentile value, based on 1991 NY Angler and 1990 US Census data.	
	CF	Conversion Factor	kg/g	1.00E-03	--	1.00E-03	--	
	BW	Body Weight	kg	70	Mean adult body weight, males and females (USEPA, 1989b).	70	Mean adult body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
	AT-NC	Averaging Time (Noncancer)	days	2,555	ED (years) x 365 days/year.	4,380	ED (years) x 365 days/year.	

\*\* Species-weighted PCB concentration averaged over river location.

TABLE 2-13  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
UPPER HUDSON RIVER SEDIMENT - Adult Recreator

Scenario Timeframe: Current/Future  
Medium: Sediment  
Exposure Medium: Sediment  
Exposure Point: Banks of Upper Hudson  
Receptor Population: Recreator  
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	C <sub>sediment</sub>	Chemical Concentration in Sediment	mg/kg	28.7	See Table 2-9	14.9	See Table 2-9	Average Daily Intake (mg/kg-day) = $C_{\text{sediment}} \times IR_{\text{sediment}} \times FS \times EF \times ED \times CF \times 1/BW \times 1/AT$
	IR <sub>sediment</sub>	Ingestion Rate of Sediment	mg/day	50	Mean adult soil ingestion rate (USEPA, 1997f).	50	Mean adult soil ingestion rate (USEPA, 1997f).	
	FS	Fraction from Source	unitless	1	Assumes 100% sediment exposure is from Upper Hudson.	1	Assumes 100% sediment exposure is from Upper Hudson.	
	EF	Exposure Frequency	days/year	13	1 day/week, 3 months/yr	7	Approximately 50% of RME	
	ED	Exposure Duration	years	23	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	5	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	kg/mg	1.00E-06	--	1.00E-06	--	
	BW	Body Weight	kg	70	Mean adult body weight, males and females (USEPA, 1989b).	70	Mean adult body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
	AT-NC	Averaging Time (Noncancer)	days	8,395	ED (years) x 365 days/year.	1,825	ED (years) x 365 days/year.	
Dermal	C <sub>sediment</sub>	Chemical Concentration in Sediment	mg/kg	28.7	See Table 2-9	14.9	See Table 2-9	Average Daily Intake (mg/kg-day) = $C_{\text{sediment}} \times DA \times AF \times SA \times EF \times ED \times CF \times 1/BW \times 1/AT$
	DA	Dermal Absorption	unitless	0.14	Based on absorption of PCBs from soil in monkeys (Wester, 1993).	0.14	Based on absorption of PCBs from soil in monkeys (Wester, 1993).	
	AF	Adherence Factor	mg/cm <sup>2</sup>	0.3	50% value for adult (reed gatherer) : hands, lower legs, forearms, and face (USEPA, 1999f).	0.3	50% value for adult (reed gatherer) : hands, lower legs, forearms, and face (USEPA, 1999f).	
	SA	Surface Area	cm <sup>2</sup> /event	6,073	Ave male/female 50th percentile: hands, lower legs, forearms, feet, and face (USEPA, 1997f).	6,073	Ave male/female 50th percentile: hands, lower legs, forearms, feet, and face (USEPA, 1997f).	
	EF	Exposure Frequency	event/year	13	1 day/week, 3 months/yr	7	Approx. 50% of RME	
	ED	Exposure Duration	years	23	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	5	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	kg/mg	1.00E-06	--	1.00E-06	--	
	BW	Body Weight	kg	70	Mean adult body weight, males and females (USEPA, 1989b).	70	Mean adult body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
AT-NC	Averaging Time (Noncancer)	days	8,395	ED (years) x 365 days/year.	1,825	ED (years) x 365 days/year.		

TABLE 2-14  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
UPPER HUDSON RIVER SEDIMENT - Adolescent Recreator

Scenario Timeframe: Current/Future  
Medium: Sediment  
Exposure Medium: Sediment  
Exposure Point: Banks of Upper Hudson  
Receptor Population: Recreator  
Receptor Age: Adolescent

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/Reference	CT Value	CT Rationale/Reference	Intake Equation/Model Name
Ingestion	C <sub>sediment</sub>	Chemical Concentration in Sediment	mg/kg	28.7	See Table 2-9	14.9	See Table 2-9	Average Daily Intake (mg/kg-day) = $C_{\text{sediment}} \times IR_{\text{sediment}} \times FS \times EF \times ED \times CF \times 1/BW \times 1/AT$
	IR <sub>sediment</sub>	Ingestion Rate of Sediment	mg/day	50	Mean soil ingestion rate (USEPA, 1997f).	50	Mean soil ingestion rate (USEPA, 1997f).	
	FS	Fraction from Source	unitless	1	Assumes 100% sediment exposure is from Upper Hudson.	1	Assumes 100% sediment exposure is from Upper Hudson.	
	EF	Exposure Frequency	days/year	39	3 days/week, 3 months/yr	20	Approximately 50% of RME	
	ED	Exposure Duration	years	12	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	3	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	kg/mg	1.00E-06	--	1.00E-06	--	
	BW	Body Weight	kg	43	Mean adolescent body weight, males and females (USEPA, 1989b).	43	Mean adolescent body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
	AT-NC	Averaging Time (Noncancer)	days	4,380	ED (years) x 365 days/year.	1,095	ED (years) x 365 days/year.	
Dermal	C <sub>sediment</sub>	Chemical Concentration in Sediment	mg/kg	28.7	See Table 2-9	14.9	See Table 2-9	Average Daily Intake (mg/kg-day) = $C_{\text{sediment}} \times DA \times AF \times SA \times EF \times ED \times CF \times 1/BW \times 1/AT$
	DA	Dermal Absorption	unitless	0.14	Based on absorption of PCBs from soil in monkeys (Wester, 1993).	0.14	Based on absorption of PCBs from soil in monkeys (Wester, 1993).	
	AF	Adherence Factor	mg/cm <sup>2</sup>	0.25	Midpoint of adult and child AF: Hands, lower legs, forearms, and face (USEPA, 1999f).	0.25	Midpoint of adult and child AF: Hands, lower legs, forearms, and face (USEPA, 1999f).	
	SA	Surface Area	cm <sup>2</sup> /event	4,263	Ave male/female 50th percentile age 12: hands, lower legs, forearms, feet, and face (USEPA, 1997f).	4,263	Ave male/female 50th percentile age 12: hands, lower legs, forearms, feet, and face (USEPA, 1997f).	
	EF	Exposure Frequency	event/year	39	3 days/week, 3 months/yr	20	Approximately 50% of RME	
	ED	Exposure Duration	years	12	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	3	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	kg/mg	1.00E-06	--	1.00E-06	--	
	BW	Body Weight	kg	43	Mean adolescent body weight, males and females (USEPA, 1989b).	43	Mean adolescent body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
	AT-NC	Averaging Time (Noncancer)	days	4,380	ED (years) x 365 days/year.	1,095	ED (years) x 365 days/year.	

TABLE 2-15  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
UPPER HUDSON RIVER SEDIMENT - Child Recreator

Scenario Timeframe: Current/Future  
Medium: Sediment  
Exposure Medium: Sediment  
Exposure Point: Banks of Upper Hudson  
Receptor Population: Recreator  
Receptor Age: Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	C <sub>sediment</sub>	Chemical Concentration in Sediment	mg/kg	28.7	See Table 2-9	14.9	See Table 2-9	Average Daily Intake (mg/kg-day) = $C_{\text{sediment}} \times IR_{\text{sediment}} \times FS \times EF \times ED \times CF \times 1/BW \times 1/AT$
	IR <sub>sediment</sub>	Ingestion Rate of Sediment	mg/day	100	Mean child soil ingestion rate (USEPA, 1997f).	100	Mean child soil ingestion rate (USEPA, 1997f).	
	FS	Fraction from Source	unitless	1	Assumes 100% sediment exposure is from Upper Hudson.	1	Assumes 100% sediment exposure is from Upper Hudson.	
	EF	Exposure Frequency	days/year	13	1 day/week, 3 months/yr	7	Approx. 50% of RME	
	ED	Exposure Duration	years	6	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	3	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	kg/mg	1.00E-06	--	1.00E-06	--	
	BW	Body Weight	kg	15	Mean child body weight, males and females (USEPA, 1989b).	15	Mean child body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
AT-NC	Averaging Time (Noncancer)	days	2,190	ED (years) x 365 days/year.	1,095	ED (years) x 365 days/year.		
Dermal	C <sub>sediment</sub>	Chemical Concentration in Sediment	mg/kg	28.7	See Table 2-9	14.9	See Table 2-9	Average Daily Intake (mg/kg-day) = $C_{\text{sediment}} \times DA \times AF \times SA \times EF \times ED \times CF \times 1/BW \times 1/AT$
	DA	Dermal Absorption	unitless	0.14	Based on absorption of PCBs from soil in monkeys (Wester, 1993).	0.14	Based on absorption of PCBs from soil in monkeys (Wester, 1993).	
	AF	Adherence Factor	mg/cm <sup>2</sup>	0.2	50% value for children (moist soil) : hands, lower legs, forearms, and face (USEPA, 1999f).	0.2	50% value for children (moist soil) : hands, lower legs, forearms, and face (USEPA, 1999f).	
	SA	Surface Area	cm <sup>2</sup> /event	2,792	50th percentile ave for male/female child age 6: hands, lower legs, forearms, feet, and face (USEPA, 1997f).	2,792	50th percentile ave for male/female child age 6: hands, lower legs, forearms, feet, and face (USEPA, 1997f).	
	EF	Exposure Frequency	event/year	13	1 day/week, 3 months/yr	7	Approx. 50% of RME	
	ED	Exposure Duration	years	6	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	3	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	kg/mg	1.00E-06	--	1.00E-06	--	
	BW	Body Weight	kg	15	Mean child body weight, males and females (USEPA, 1989b).	15	Mean child body weight, males and females (USEPA, 1989b).	
AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).		
AT-NC	Averaging Time (Noncancer)	days	2,190	ED (years) x 365 days/year.	1,095	ED (years) x 365 days/year.		

TABLE 2-16  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
UPPER HUDSON RIVER WATER - Adult Recreator

Scenario Timeframe: Current/Future  
Medium: River Water  
Exposure Medium: River Water  
Exposure Point: Upper Hudson River  
Receptor Population: Recreator  
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Dermal	C <sub>water</sub>	Chemical Concentration in River Water	mg/L	3.1E-05	See Table 2-10	2.4E-05	See Table 2-10	Average Daily Intake (mg/kg-day) = $C_{water} \times Kp \times SA \times DE \times EF \times ED \times CF \times 1/BW \times 1/AT$
	Kp	Dermal Permeability Constant (for PCBs)	cm/hour	0.48	Hexachlorobiphenyl (USEPA, 1999f)	0.48	Hexachlorobiphenyl (USEPA, 1999f)	
	SA	Surface Area	cm <sup>2</sup>	18,150	Full body contact (USEPA, 1997f)	18,150	Full body contact (USEPA, 1997f)	
	DE	Dermal Exposure Time	hours/day	2.6	National average for swimming (USEPA, 1989b).	2.6	National average for swimming (USEPA, 1989b).	
	EF	Exposure Frequency	days/year	13	1 day/week, 3 months/yr	7	Approx. 50% of RME	
	ED	Exposure Duration	years	23	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	5	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	L/cm <sup>3</sup>	1.00E-03	--	1.00E-03	--	
	BW	Body Weight	kg	70	Mean adult body weight, males and females (USEPA, 1989b).	70	Mean adult body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
	AT-NC	Averaging Time (Noncancer)	days	8,395	ED (years) x 365 days/year.	1,825	ED (years) x 365 days/year.	

TABLE 2-17  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
UPPER HUDSON RIVER WATER - Adolescent Recreator

Scenario Timeframe: Current/Future
Medium: River Water
Exposure Medium: River Water
Exposure Point: Upper Hudson River
Receptor Population: Recreator
Receptor Age: Adolescent

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Dermal	C <sub>water</sub>	Chemical Concentration in River Water	mg/L	3.1E-05	See Table 2-10	2.4E-05	See Table 2-10	Average Daily Intake (mg/kg-day) = C <sub>water</sub> x Kp x SA x DE x EF x ED x CF x 1/BW x 1/AT
	Kp	Dermal Permeability Constant (for PCBs)	cm/hour	0.48	Hexachlorobiphenyl (USEPA, 1999f)	0.48	Hexachlorobiphenyl (USEPA, 1999f)	
	SA	Surface Area	cm <sup>2</sup>	13,100	Full body contact (USEPA, 1997f)	13,100	Full body contact (USEPA, 1997f)	
	DE	Dermal Exposure Time	hours/day	2.6	National average for swimming (USEPA, 1989b).	2.6	National average for swimming (USEPA, 1989b).	
	EF	Exposure Frequency	days/year	39	3 days/week, 3 months/yr	20	Approx. 50% of RME	
	ED	Exposure Duration	years	12	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	3	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	L/cm <sup>3</sup>	1.00E-03	--	1.00E-03	--	
	BW	Body Weight	kg	43	Mean adolescent body weight, males and females (USEPA, 1989b).	43	Mean adolescent body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
	AT-NC	Averaging Time (Noncancer)	days	4,380	ED (years) x 365 days/year.	1,095	ED (years) x 365 days/year.	

TABLE 2-18  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
UPPER HUDSON RIVER WATER - Child Recreator

Scenario Timeframe: Current/Future  
 Medium: River Water  
 Exposure Medium: River Water  
 Exposure Point: Upper Hudson River  
 Receptor Population: Recreator  
 Receptor Age: Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Dermal	C <sub>water</sub>	Chemical Concentration in River Water	mg/L	3.1E-05	See Table 2-10	2.4E-05	See Table 2-10	Average Daily Intake (mg/kg-day) = $C_{water} \times K_p \times SA \times DE \times EF \times ED \times CF \times 1/BW \times 1/AT$
	K <sub>p</sub>	Dermal Permeability Constant (for PCBs)	cm/hour	0.48	Hexachlorobiphenyl (USEPA, 1999f)	0.48	Hexachlorobiphenyl (USEPA, 1999f)	
	SA	Surface Area	cm <sup>2</sup>	6,880	Full body contact (USEPA, 1997f)	6,880	Full body contact (USEPA, 1997f)	
	DE	Dermal Exposure Time	hours/day	2.6	National average for swimming (USEPA, 1989b).	2.6	National average for swimming (USEPA, 1989b).	
	EF	Exposure Frequency	days/year	13	1 day/week, 3 months/yr	7	Approx. 50% of RME	
	ED	Exposure Duration	years	6	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	3	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	L/cm <sup>3</sup>	1.00E-03	--	1.00E-03	--	
	BW	Body Weight	kg	15	Mean child body weight, males and females (USEPA, 1989b).	15	Mean child body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
	AT-NC	Averaging Time (Noncancer)	days	2,190	ED (years) x 365 days/year.	1,095	ED (years) x 365 days/year.	

TABLE 2-19  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
UPPER HUDSON RIVER AIR - Adult Recreator

Scenario Timeframe: Current/Future  
 Medium: River Water  
 Exposure Medium: Outdoor Air  
 Exposure Point: Upper Hudson River -- Volatilized PCBs  
 Receptor Population: Recreator  
 Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	C <sub>air</sub>	Chemical Concentration in Air	µg/m <sup>3</sup>	1.7E-02	See Table 2-11	1.0E-03	See Table 2-11	Average Daily Intake (mg/kg-day) = C <sub>air</sub> x IR <sub>air</sub> x DE x EF x ED x CF x 1/BW x 1/AT
	IR <sub>air</sub>	Inhalation Rate of Air	m <sup>3</sup> /hour	1.6	Mean inhalation rate for adults during short-term, moderate activities (USEPA, 1997f).	1.6	Mean inhalation rate for adults during short-term, moderate activities (USEPA, 1997f).	
	DE	Duration of Event	hours/day	4	Site-specific assumption	4	Site-specific assumption	
	EF	Exposure Frequency	days/year	13	1 day/week, 3 months/yr	7	Approx. 50% of RME	
	ED	Exposure Duration	years	23	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	5	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	mg/µg	1.00E-03	--	1.00E-03	--	
	BW	Body Weight	kg	70	Mean adult body weight, males and females (USEPA, 1989b).	70	Mean adult body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
AT-NC	Averaging Time (Noncancer)	days	8,395	ED (years) x 365 days/year.	1,825	ED (years) x 365 days/year.		

TABLE 2-20  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
UPPER HUDSON RIVER AIR - Adolescent Recreator

Scenario Timeframe: Current/Future  
Medium: River Water  
Exposure Medium: Outdoor Air  
Exposure Point: Upper Hudson River -- Volatilized PCBs  
Receptor Population: Recreator  
Receptor Age: Adolescent

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	C <sub>air</sub>	Chemical Concentration in Air	µg/m <sup>3</sup>	1.7E-02	See Table 2-11	1.0E-03	See Table 2-11	Average Daily Intake (mg/kg-day) = C <sub>air</sub> x IR <sub>air</sub> x DE x EF x ED x CF x 1/BW x 1/AT
	IR <sub>air</sub>	Inhalation Rate of Air	m <sup>3</sup> /hour	1.6	Mean inhalation rate for adults during short-term, moderate activities (USEPA, 1997f).	1.6	Mean inhalation rate for adults during short-term, moderate activities (USEPA, 1997f).	
	DE	Duration of Event	hours/day	4	Site-specific assumption	4	Site-specific assumption	
	EF	Exposure Frequency	days/year	39	3 days/week, 3 months/yr	20	Approx. 50% of RME	
	ED	Exposure Duration	years	12	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	3	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	mg/µg	1.00E-03	--	1.00E-03	--	
	BW	Body Weight	kg	43	Mean adolescent body weight, males and females (USEPA, 1989b).	43	Mean adolescent body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
	AT-NC	Averaging Time (Noncancer)	days	4,380	ED (years) x 365 days/year.	1,095	ED (years) x 365 days/year.	

TABLE 2-21  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
UPPER HUDSON RIVER AIR - Child Recreator

Scenario Timeframe: Current/Future  
 Medium: River Water  
 Exposure Medium: Outdoor Air  
 Exposure Point: Upper Hudson River -- Volatilized PCBs  
 Receptor Population: Recreator  
 Receptor Age: Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	C <sub>air</sub>	Chemical Concentration in Air	µg/m <sup>3</sup>	1.7E-02	See Table 2-11	1.0E-03	See Table 2-11	Average Daily Intake (mg/kg-day) = C <sub>air</sub> x IR <sub>air</sub> x DE x EF x ED x CF x 1/BW x 1/AT
	IR <sub>air</sub>	Inhalation Rate of Air	m <sup>3</sup> /hour	1.2	Mean inhalation rate for children during short-term, moderate activities (USEPA, 1997f).	1.2	Mean inhalation rate for children during short-term, moderate activities (USEPA, 1997f).	
	DE	Duration of Event	hours/day	4	Site-specific assumption	4	Site-specific assumption	
	EF	Exposure Frequency	days/year	13	1 day/week, 3 months/yr	7	Approx. 50% of RME	
	ED	Exposure Duration	years	6	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	3	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	mg/µg	1.00E-03	--	1.00E-03	--	
	BW	Body Weight	kg	15	Mean child body weight, males and females (USEPA, 1989b).	15	Mean child body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
AT-NC	Averaging Time (Noncancer)	days	2,190	ED (years) x 365 days/year.	1,095	ED (years) x 365 days/year.		

TABLE 2-22  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
UPPER HUDSON RIVER AIR - Adult Resident

Scenario Timeframe: Current/Future  
Medium: River Water  
Exposure Medium: Outdoor Air  
Exposure Point: Upper Hudson River -- Volatilized PCBs  
Receptor Population: Resident  
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	C <sub>air</sub>	Chemical Concentration in Air	µg/m <sup>3</sup>	1.7E-02	See Table 2-11	1.0E-03	See Table 2-11	Average Daily Intake (mg/kg-day) = C <sub>air</sub> x IR <sub>air</sub> x EF x ED x CF x 1/BW x 1/AT
	IR <sub>air</sub>	Inhalation Rate of Air	m <sup>3</sup> /day	20	RME inhalation rate (USEPA, 1991b).	20	RME inhalation rate (USEPA, 1991b).	
	EF	Exposure Frequency	days/year	350	USEPA (1991b)	350	USEPA (1991b)	
	ED	Exposure Duration	years	23	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	5	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	mg/µg	1.00E-03	--	1.00E-03	--	
	BW	Body Weight	kg	70	Mean adult body weight, males and females (USEPA, 1989b).	70	Mean adult body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
	AT-NC	Averaging Time (Noncancer)	days	8,395	ED (years) x 365 days/year.	1,825	ED (years) x 365 days/year.	

TABLE 2-23  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
UPPER HUDSON RIVER AIR - Adolescent Resident

Scenario Timeframe: Current/Future  
 Medium: River Water  
 Exposure Medium: Outdoor Air  
 Exposure Point: Upper Hudson River -- Volatilized PCBs  
 Receptor Population: Resident  
 Receptor Age: Adolescent

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	C <sub>air</sub>	Chemical Concentration in Air	µg/m <sup>3</sup>	1.7E-02	See Table 2-11	1.0E-03	See Table 2-11	Average Daily Intake (mg/kg-day) = C <sub>air</sub> x IR <sub>air</sub> x EF x ED x CF x 1/BW x 1/AT
	IR <sub>air</sub>	Inhalation Rate of Air	m <sup>3</sup> /day	13.5	Mean long-term inhalation rate for adolescents, aged 12-14 (USEPA, 1997f). USEPA (1991b)	13.5	Mean long-term inhalation rate for adolescents, aged 12-14 (USEPA, 1997f). USEPA (1991b)	
	EF	Exposure Frequency	days/year	350		350		
	ED	Exposure Duration	years	12	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	3	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	mg/µg	1.00E-03	--	1.00E-03	--	
	BW	Body Weight	kg	43	Mean adolescent body weight, males and females (USEPA, 1989b).	43	Mean adolescent body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
	AT-NC	Averaging Time (Noncancer)	days	4,380	ED (years) x 365 days/year.	1,095	ED (years) x 365 days/year.	

TABLE 2-24  
VALUES USED FOR DAILY INTAKE CALCULATIONS  
UPPER HUDSON RIVER AIR - Child Resident

Scenario Timeframe: Current/Future  
 Medium: River Water  
 Exposure Medium: Outdoor Air  
 Exposure Point: Upper Hudson River -- Volatilized PCBs  
 Receptor Population: Resident  
 Receptor Age: Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	C <sub>air</sub>	Chemical Concentration in Air	µg/m <sup>3</sup>	1.7E-02	See Table 2-11	1.0E-03	See Table 2-11	Average Daily Intake (mg/kg-day) = C <sub>air</sub> x IR <sub>air</sub> x EF x ED x CF x 1/BW x 1/AT
	IR <sub>air</sub>	Inhalation Rate of Air	m <sup>3</sup> /day	8.3	Mean long-term inhalation rate for children aged 3-5 years (USEPA, 1997f).	8.3	Mean long-term inhalation rate for children aged 3-5 years (USEPA, 1997f).	
	EF	Exposure Frequency	days/year	350	USEPA (1991b)	350	USEPA (1991b)	
	ED	Exposure Duration	years	6	derived from 95th percentile of residence duration in 5 Upper Hudson Counties (see text)	3	derived from 50th percentile of residence duration in 5 Upper Hudson Counties (see text)	
	CF	Conversion Factor	mg/µg	1.00E-03	--	1.00E-03	--	
	BW	Body Weight	kg	15	Mean child body weight, males and females (USEPA, 1989b).	15	Mean child body weight, males and females (USEPA, 1989b).	
	AT-C	Averaging Time (Cancer)	days	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	25,550	70-year lifetime exposure x 365 d/yr (USEPA, 1989b).	
	AT-NC	Averaging Time (Noncancer)	days	2,190	ED (years) x 365 days/year.	1,095	ED (years) x 365 days/year.	